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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/574,003
Filing Date: September 29, 2006
Appellant(s): CURDY ET AL.

Duane M. Byers
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 11/18/10 appealing from the Office action mailed 3/23/10.

The information disclosure statement (IDS) submitted on 8/19/10 was filed after the mailing date of the Final Office action on 3/23/10. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 1-2, 4-7, and 13 are pending in this application and are part of the appeal.

(4) Status of Amendments After Final

The Appellant's statement of the status of amendments after final rejection contained in the brief is correct. No amendments have been filed.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix in the brief is correct.

(8) Evidence Relied Upon

5868973

Muller et al.

02-1999

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-2,4-7,13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muller et al. US Patent 5868973 (hereinafter Muller '973). Examiner wishes to point out to appellant that claims 1-2,4-7,13 are directed towards an apparatus and as such will be examined under such conditions. The material worked upon or the processes of using the apparatus are viewed as recitation of intended use and are given little patentable weight (Please see MPEP 2114 R1-2115 R2 for further details).

Regarding claims 1-2,4-7,13, Muller '973 discloses as shown in Figures 2-3, a device for the continuous manufacture of microparticles or nanoparticles from at least one aqueous phase and one organic phase comprising (Column 1 Line 5-23): a homogenization compartment (housing (41)) in the form of a cylinder (Figure 3 housing (41)), which is defined by a tubular wall (Figure 3 housing (41)) forming the casing of said cylinder (Figure 3 housing (41)) and by a first side wall (wall side of housing (41) where the dope supply line (3) enters) and a second side wall (wall side of housing (41) between sliding ring seal (64) and stator (45)) which are positioned at each end of said tubular wall (housing (41)); the device additionally comprising a first inlet (dope supply line (3)) and a second inlet (curved feed line (9)) which pass through said first side wall (wall side of housing (41) where the dope supply line (3) enters) and which are appropriate for respectively delivering an organic phase and an aqueous phase to the homogenization compartment (housing (41)) and an outlet (discharge pipe (13)) appropriate for extracting a particle suspension from the homogenization compartment

(housing (41)); the homogenization compartment (housing (41)) including a mixing system comprising a rotor/stator combination (rotor (44) stator (45 and 43)), wherein

a) said side walls are positioned along a plane (wall side of housing (41) where the dope supply line (3) enters) and (wall side of housing (41) between sliding ring seal (64) and stator (45)).

b) the axis of symmetry of said cylinder is positioned in a plane (Figures 2-3 housing (41)),

c) the rotor is installed so that it rotates about an axis (rotor (44)) which passes through said second side wall (wall side of housing (41) between sliding ring seal (64) and stator (45)).

d) said first inlet is a hollow tube (dope supply line (3)) positioned in the extension of the axis of the rotor (rotor (44)) and comprises a tip (nozzle (46-49)) situated inside the rotor (rotor (44)) and inside the stator (stator (43 and 45)), and

e) the homogenization compartment (housing (41)) exhibits a top side on which said outlet (discharge pipe (13); note: it is the Examiner's position that the discharge pipe (13) is situated at a top side) is situated.

Wherein the rotor (rotor (44)) and the stator (stator (43 and 45)) are cylindrical in shape (Note: the sprocket (50) is part of the rotor (44) assembly (Column 9 Line 52) therefore, the rotor also has a cylindrical shape like the sprocket (50) as shown in Figure 3. Additionally, the stator (43) has a ring-shaped base plate (11) (Column 9 Line 60)).
Wherein the first inlet (dope supply line (3)) comprises perforations (nozzle (46-49)).

Wherein the number of perforations (nozzle (46-49)) is from 1 to 20 (nozzle (46-49)).

Wherein the perforations (nozzle (46-49)) have a diameter (nozzle diameter between 5 and 10 mm, Column 8 Line 1-2). Wherein the dimensions of the rotor/stator combination (rotor (44) stator (43 and 45)) are such that the mixing system (rotor (44) stator (43 and 45)) occupies a volume of the homogenization compartment (housing (41); note: The rotor (44) and stator (43 and 45) combination occupies more than 80% of the housing (41)). Wherein the rotor (rotor (44)) and the stator (stator (43 and 45)) comprise a row of teeth (teeth (55)) and have spacing between the teeth (teeth (55); Note: between each teeth (55) there are spacing created by the gap (54)).

Muller '973 discloses the claimed invention except for the side walls which are positioned along a vertical plane, the cylinder having an axis of symmetry that is horizontal, and the rotor rotating about a horizontal axis. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the side walls positioned along a vertical plane, the cylinder having an axis of symmetry that is horizontal, and the rotor rotating about a horizontal axis, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

Additionally, Muller '973 discloses the claimed invention except for the perforations having a diameter from 0.01 mm to 1 mm, a mixing system that occupies 4% to 40% of the volume of the homogenization compartment, and the spacing between the teeth is from 1 to 4 mm. However, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the perforations to have a diameter from 0.01

mm to 1 mm, the mixing system to occupy 4% to 40% of the volume of the homogenization compartment and to have the spacing between the teeth to be from 1 to 4 mm for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

(10) Response to Argument

Appellant traversed the obviousness rejections of all pending claims 1-2,4-7, and 13 currently presented in the previous Final Office action dated 3/23/10.

Appellant argued that appellant claim is directed to "a device for the continuous manufacture of microparticles or nanoparticles from at least one aqueous phase and one organic phase." In contrast, appellant alleged that Muller does not concern or even relate to the manufacture of microparticles or nanoparticles.

In response, the Examiner respectfully disagree and submit that in an apparatus claim, a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). Thus, the inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims. *In re Young*, 75 F.2d 996, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)). Furthermore, expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim. *Ex parte Thibault*,

164 USPQ 666, 667 (Bd. App. 1969). Regardless, it is submitted that Huang '973 discloses an apparatus that can produce fibrets that are below 200 um (Column 8 Line 37-43).

Regarding claim 1, appellant argued that the instant claim requires that side walls of the homogenization compartment are positioned along a vertical plane, whereas the side walls of Muller compartment are not vertical. Appellant has submitted an annotated drawing of Muller's Figure 2 as shown below indicating Muller's sides designated as 41a and 41b. Appellant argued that Muller's device would not be turned 90 degrees because then it would not function properly to expel its fibrets horizontally out from its rotating "star-shaped" nozzles 46, 47, 48, and 49 as depicted in Figures 2 and 3 of Muller and described in column 9, lines 47-51 of Muller. Additionally regarding claim 1, appellant argued that the instant claim require that the axis of symmetry of the cylindrical homogenization compartment is positioned horizontally, whereas Muller's axis of symmetry of its cylinder is vertical as indicated by number 40a in appellant's annotated drawing of Muller's Figure 2 shown below. Furthermore, regarding claim 1, appellant argued that the instant claim require that the rotor is installed so that it rotates about a horizontal axis, whereas Muller's rotor rotates around a vertical axis as indicated by number 40a in appellant's annotated drawing of Muller's Figure 2 shown below. Appellant also argued that the instant claim require that the homogenization compartment exhibits a top side on which said outlet is situated, whereas Muller's outlet is on the left vertical side of its device as indicated by number 13 in appellant's annotated drawing of Muller's Figure 2 shown below. Thus, Muller teaches away from

appellant's claimed invention that critically requires the underlined limitation and as shown in appellant's figures 3 and 7.

Appellant's Annotated Drawing of Muller's Figure 2 As Submitted In The Appeal Brief

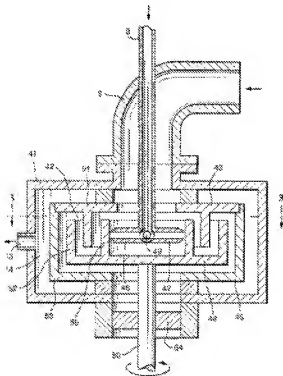


Fig. 2

In response, the Examiner respectfully disagrees. As demonstrated in the aforementioned rejection above, Muller discloses a homogenization compartment (*housing 41*) in the form of a cylinder (*Figure 3 housing 41*) which is defined by a

tubular wall (Figure 3 housing (41)) forming the casing of said cylinder (Figure 3 housing (41)) and by a first side wall (wall side of housing (41) where the dope supply line (3) enters) and a second side wall (wall side of housing (41) between sliding ring seal (64) and stator (45)), wherein said side walls are positioned along a plane (wall side of housing (41) where the dope supply line (3) enters) and (wall side of housing (41) between sliding ring seal (64) and stator (45)), the axis of symmetry of said cylinder is positioned in a plane (Figures 2-3 housing (41)), the rotor is installed so that it rotates about an axis (rotor (44)), the homogenization compartment (housing (41)) exhibits a top side on which said outlet is situated (discharge pipe (13); note: it is the Examiner's position that the discharge pipe (13) is situated at a top side). Muller does not prohibit the dispersing facility (40) in Figure 2 from being non-vertical. Therefore, although Muller is silent to the walls being positioned along a vertical plane, axis of symmetry of the cylindrical homogenization compartment is positioned horizontally, and the rotor is installed so that it rotates about a horizontal axis; however such rearrangement of orientation of Muller's device would have been obvious to one having ordinary skill in the art at the time the invention was made. Additionally, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the rotor rotate about a horizontal axis, since the skilled artisan is limited to two axis in which the rotor can rotate about (horizontal axis or vertical axis), and therefore it is up to the user to choose the correct axis for the intended purpose. "A person of ordinary skill has good reason to pursue the known option within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and

common sense." *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 82 USPQ2d 1385 (2007). Changing the orientation of a device, in this case rotating the orientation of the dispersing facility (40) by 90°, would not change the structural element of the device since it is structurally the same regardless how it's being oriented. For example, a box containing water that is situated upright is capable of retaining the water and therefore preventing the water from spilling over. If the same box containing water is tilted to its side, then the water would spill because the box can no longer retain the water. However, the box is structurally the same in both cases regardless if the water can be contained in the box or not. Thus, appellant's argument regarding the fibrets being expelled horizontally is moot in view of the preceding argument set forth by the Examiner. Regarding appellant's claim of criticality of the orientation of appellant's device, it is submitted that appellant has not properly demonstrated how the orientation as claimed is critical. Additionally, appellant's disclosure does not disclose such criticality as well. Furthermore, it has been noted that appellant's original claim (dated 3/29/06) do not recite "**a) said side walls are positioned along a vertical plane, b) the axis of symmetry of said cylinder is positioned horizontally, c) the rotor is installed so that it rotates about a horizontal axis which passes through said second side wall, d) said first inlet is a hollow tube positioned in the extension of the axis of the rotor and comprises a final part situated inside the rotor and inside the stator**" as currently claimed. In matter of fact, it was only after appellant filed a preliminary amendment (dated 3/29/06), were the aforementioned limitations recited. Therefore, it is unclear how appellant can claim the criticality of orientation as indicated

by the underlined-boldd limitations when appellant did not originally envisioned it? The Examiner would like to note that appellant's alleged reference numbers "41a" and "41b" are not shown in the above annotated drawing submitted by appellant.

Appellant argued that one skilled in the microparticles and nanoparticles art would not resort to Muller's "fibrets" invention since it was not successful because Muller patent expired due to non-payment of maintenance fees and Muller specifically teaches that its device must be used in the non-rotated position. Additionally, appellant further stated that only improper hindsight reasoning would lead a person of skill in the microparticles and nanoparticles art to resort to Muller and to rotate Muller's device 90 degrees, and, even when doing so, Muller's device for making fibrets would not work for its intended purpose (or even appellant's purpose) because of the positioning of Muller's inlets, their sizes, the rotor and stator configuration and required sprockets, and the specifically designed star-shaped nozzles that would no longer be horizontal. Such a rotated configuration of Muller would create inconsistent/problematic fibrets.

In response, the Examiner respectfully disagrees. With respect to appellant's allegation regarding non-payment, the Examiner believe that this argument is unfounded. Regardless if Muller paid the maintenance fee or not, it does not constitute the invention as disclosed in Muller's patent to be unsuccessful. Therefore the arguments of counsel cannot take the place of evidence in the record. *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965); *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997). In response to appellant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be

recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the appellant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Thus, as demonstrated previously, it would have been obvious to one having ordinary in the art at the time the invention was made to make such rearrangement of orientation of Muller's device. Also as demonstrated above, Muller does not prohibit the dispersing facility (40) in Figure 2 from being non-vertical. Additionally, Muller does not disclose that making fibrets would not work for its intended purpose and inconsistent/problematic fibrets would result when the dispersing facility (40) is in a non-vertical position. Furthermore, appellant has failed to show why rotating the configuration of Muller device would create inconsistent/problematic fibrets.

Appellant argued that Muller discloses obtaining fibret "fineness and homogeneity" (Column 2, line 27; Column 6, Lines 34-35) by requiring a system that ensure "identical conditions" "at all nozzles" (Column 8, Lines 13-15). Thus, a rotation of the Muller device by 90 degrees would destroy this requirement and impair the fibret quality because "identical conditions" "at all nozzles" would not be met. To demonstrate how rotating Muller's device by 90 degree would teach away from Muller's objective as indicated by the above underlined limitation, appellant alleged that the outlet flow rate of the nozzles were different after solving for Bernoulli's equation.

In response, the Examiner respectfully disagrees. The Examiner has reviewed appellant's calculation with respect to the outlet flow of the nozzles using Bernoulli's equation in the hypothetical situation where Muller's device is rotated 90 degrees (vertical configuration). This calculation was found to be not persuasive because the instant claims do not recite a flow rate and therefore the calculation is not commensurate with the scope of the claims. Furthermore, it is submitted that Muller does not refer to the flow of the nozzles when he suggests the "identical conditions". Rather, Muller suggests that the "coagulation bath flow" at all the nozzles to be in identical condition (column 8, lines 13-15). Looking at Muller's Figures 1 and 2, the coagulation bath makeup tank (8) is fed into the coagulation bath supply line (9) which feeds into the dispersing facility (40) (Column 9 Line 9-20). Clearly, the coagulation bath supply line (9) never passes through the nozzles as shown in Figure 2. Thus, appellant's argument is moot in view of the preceding argument set forth by the Examiner.

Regarding claim 4, appellant argued that the first inlet "perforations" are quite different than Muller's specifically designed star-shaped nozzles 46, 47, 48, and 49, and therefore no one skilled in the art would view the term "perforations" to be the same as or an obvious variant of Muller's specifically designed star-shaped nozzles that extend "radially outward."

In response, the Examiner respectfully disagrees. It is submitted that Muller's nozzles must have holes, and therefore the nozzles are obvious over the claimed "perforations", when interpreting the latter in the most broadest and reasonable manner.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Ninh Van Le/

Conferees:

/Yogendra N Gupta/

Supervisory Patent Examiner, Art Unit 1791

/Anthony McFarlane/